

WHAT IS CLAIMED IS:

1. A noise barrier apparatus for preventing external noise from causing noise in ears on opposing sides of a user's head, said noise barrier apparatus comprising:

a pair of noise barrier devices to be held against the opposing sides of the user's head at the respective ears;

a noise barrier device holding apparatus coupled to said noise barrier devices to hold said noise barrier devices against the opposing sides of the user's head at the respective ears;

wherein said noise barrier devices respectively comprise audio chamber defining parts constructed to define enclosed audio chambers including the ear canals of the ears;

wherein said audio chamber defining parts respectively include cushion interface parts to bear against the opposing sides of the user's head;

wherein said cushion interface parts respectively comprise peripherally extending cushions to encircle the ear canal entrances of the ears;

wherein said peripherally extending cushions are deformable so as to be conformable to the opposing sides of the user's head at areas surrounding the ear canal entrances, respectively, when said audio chamber defining parts are held thereagainst by said noise barrier device holding apparatus; and

wherein each of said peripherally extending cushions comprises a material providing its respective said noise barrier device with a damping ratio greater than 0.75.

2. A noise barrier apparatus according to claim 1, wherein

said material of each of said peripherally extending cushions provides its respective said noise barrier device with a damping ratio greater than or equal to 1.0.

3. A noise barrier apparatus according to claim 1, wherein

each of said noise barrier devices comprises an ear adapter body having a first end and a second end forward of said first end and insertable into the ear canal of a respective one of the ears, said ear adapter body further having

an ear canal section adjacent said second end,
an outer ear section adjacent said first end, and

a concha section disposed between said ear canal and outer ear sections, whereby said ear canal section is disposed in the ear canal of a respective ear, the concha section is disposed adjacent the concha region of the respective ear, and the outer ear section is disposed outside the respective ear when said second end of said ear adapter body is inserted into the respective ear canal of the respective ear; and

said cushion interface parts each constitute a concha cushion mounted to said concha section of the respective said ear adapter body.

4. A noise barrier apparatus according to claim 3, wherein
said noise barrier device holding apparatus comprises ear tubes of a stethoscope.
5. A noise barrier apparatus according to claim 1, wherein
said noise barrier devices respectively comprise ear cups constructed to fit over and around the respective ears.
6. A noise barrier apparatus according to claim 5, wherein
said noise barrier device holding apparatus comprises a head band constructed to extend around a top portion of the user's head.
7. A noise barrier apparatus for preventing external noise from causing noise in ears on opposing sides of a user's head, said noise barrier apparatus comprising:
a pair of noise barrier devices to be held against the opposing sides of the user's head at the respective ears;
a noise barrier device holding apparatus coupled to said noise barrier devices to hold said noise barrier devices against the opposing sides of the user's head at the respective ears;
wherein said noise barrier devices respectively comprise audio chamber defining parts constructed to define enclosed audio chambers including the ear canals of the ears;

wherein said audio chamber defining parts respectively include cushion interface parts to bear against the opposing sides of the user's head;

wherein said cushion interface parts respectively comprise peripherally extending cushions to encircle the ear canal entrances of the ears;

wherein said peripherally extending cushions are deformable so as to be conformable to the opposing sides of the user's head at areas surrounding the ear canal entrances, respectively, when said audio chamber defining parts are held thereagainst by said noise barrier device holding apparatus; and

wherein each of said peripherally extending cushions comprises a material which is at least partially plastically deformable.

8. A noise barrier apparatus according to claim 7, wherein

each of said noise barrier devices comprises an ear adapter body having a first end and a second end forward of said first end and insertable into the ear canal of a respective one of the ears, said ear adapter body further having

an ear canal section adjacent said second end,

an outer ear section adjacent said first end, and

a concha section disposed between said ear canal and outer ear sections, whereby said ear canal section is disposed in the ear canal of a respective ear, the concha section is disposed adjacent the concha region of the respective ear, and the outer ear section is disposed outside the respective ear when said second end of said ear adapter body is inserted into the respective ear canal of the respective ear; and

said cushion interface parts each constitute a concha cushion mounted to said concha section of the respective said ear adapter body.

9. A noise barrier apparatus according to claim 8, wherein

said noise barrier device holding apparatus comprises ear tubes of a stethoscope.

10. A noise barrier apparatus according to claim 7, wherein

said noise barrier devices respectively comprise ear cups constructed to fit over and around the respective ears.

11. A noise barrier apparatus according to claim 10, wherein
said noise barrier device holding apparatus comprises a head band constructed to extend around a top portion of the user's head.

~~12.~~ A noise barrier apparatus for preventing external noise from causing noise in an ear on a side of a user's head, said noise barrier apparatus comprising:

a noise barrier device to be held against the side of the user's head at the ear;

wherein said noise barrier device comprises an audio chamber defining part constructed to define an enclosed audio chamber including the ear canal of the ear when said noise barrier device is held against the side of the user's head at the ear;

wherein said audio chamber defining part includes a cushion interface part to bear against the side of the user's head;

wherein said cushion interface part comprises a peripherally extending cushion to encircle the ear canal entrance of the ear;

wherein said peripherally extending cushion is deformable so as to be conformable to the side of the user's head at an area surrounding the ear canal entrance when said audio chamber defining part is held thereagainst; and

wherein said peripherally extending cushion comprises a material providing said noise barrier device with a damping ratio greater than 0.75.

13. A noise barrier apparatus according to claim 12, wherein
said material of said peripherally extending cushion provides said noise barrier device with a damping ratio greater than or equal to 1.0.

14. A noise barrier apparatus according to claim 12, wherein
said noise barrier device comprises an ear adapter body having a first end and a second

end forward of said first end and insertable into the ear canal of a respective one of the ears, said ear adapter body further having

- an ear canal section adjacent said second end,
- an outer ear section adjacent said first end, and

a concha section disposed between said ear canal and outer ear sections, whereby said ear canal section is disposed in the ear canal of the ear, the concha section is disposed adjacent the concha region of the ear, and the outer ear section is disposed outside the ear when said second end of said ear adapter body is inserted into the ear canal of the ear; and

said cushion interface part constitutes a concha cushion mounted to said concha section of said ear adapter body.

15. A noise barrier apparatus according to claim 12, wherein
said noise barrier device comprises an ear cup constructed to fit over and around the ear.

16. A noise barrier apparatus for preventing external noise from causing noise in an ear on a side of a user's head, said noise barrier apparatus comprising:

- a noise barrier device to be held against the side of the user's head at the ear;

wherein said noise barrier device comprises an audio chamber defining part constructed to define an enclosed audio chamber including the ear canal of the ear when said noise barrier device is held against the side of the user's head at the ear;

wherein said audio chamber defining part includes a cushion interface part to bear against the side of the user's head;

wherein said cushion interface part comprises a peripherally extending cushion to encircle the ear canal entrance of the ear;

wherein said peripherally extending cushion is deformable so as to be conformable to the side of the user's head at an area surrounding the ear canal entrance when said audio chamber defining part is held thereagainst; and

wherein said peripherally extending cushion comprises a material which is at least partially plastically deformable.

17. A noise barrier apparatus according to claim 16, wherein
each of said noise barrier devices comprises an ear adapter body having a first end and a second end forward of said first end and insertable into the ear canal of a respective one of the ears, said ear adapter body further having
an ear canal section adjacent said second end,
an outer ear section adjacent said first end, and
a concha section disposed between said ear canal and outer ear sections, whereby said ear canal section is disposed in the ear canal of a respective ear, the concha section is disposed adjacent the concha region of the respective ear, and the outer ear section is disposed outside the respective ear when said second end of said ear adapter body is inserted into the respective ear canal of the respective ear; and
said cushion interface parts each constitute a concha cushion mounted to said concha section of the respective said ear adapter body.
18. A noise barrier apparatus depending on claim 16, wherein
said noise barrier device comprises an ear cup constructed to fit over and around the ear.